NEIL ABERCROMBIE
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HAKIM OUANSAFI
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STATE OF HAWAII

DEPARTMENT OF HUMAN SERVICES
HAWAII PUBLIC HOUSING AUTHORITY
1002 NORTH SCHOOL STREET
P.O. BOX 17907
Honolulu, Hawaii 96817

ADDENDUM NO. 1

PROVIDE OPERATIONAL & PREVENTIVE MAINTENANCE SERVICES AT KUPUNA HOME O`WAIALUA

HA 1050

WAIALUA, OAHU, HAWAII

HPHA JOB NO. 11-022-150-S

FEBRUARY 2, 2012

The items listed hereinafter are hereby made a part of the contract for the above project and shall govern the work, taking precedence over previously issued plans and specifications governing the items mentioned.

A. INVITATION FOR BIDS (CMS-2011-33)

1. The **BID OFFER FORM (PROPOSAL)**, Attachment 3, shall be amended as follows:

   Replace the previously issued Bid Offer Form (Proposal) in its entirety with the Revised Bid Offer Form (Proposal).

2. The **TECHNICAL SPECIFICATIONS**, Attachment 4, shall be amended as follows:

   Replace the previously issued Technical Specifications in its entirety with the Revised Technical Specifications.

B. QUESTIONS FROM BIDDERS

1. What is the DO set at?

   Response: Generally the DO should be kept at a minimum of 2.0 mg/L.

2. Are there injection wells?

   Response: Injection wells were removed as part of the improvement project. There are no UIC requirements for the operations and maintenance service contract.

3. Are there any filters prior to discharge to leach fields?

   Response: No.

4. Is the treatment plant rated yet?

   Response: The treatment plant has not been rated by the Board of Certifications yet. Preliminary indications are that treatment plant will require a Class 2 operator.

5. How big is the septic tank?

   Response: The septic tank is 10,000 gallons.

6. Does plant need to be seeded?

   Response: The plant can be further seeded if required. However, it has been in service for approximately 1.5 months and should have healthy biological activity within the media.

7. Will there be storage available?

   Response: There is an equipment shed in the treatment plant area that can be used to store extra chlorine tablets only. Additional storage will not be provided.

8. Who will refill the fuel tank?

   Response: The Gas Company checks the tank every month and will refill tank. The fuel is propane.

9. What is the required duration of the generator test?

   Response: 30 minutes every month.

10. What are the cleanout covers in the leach field area?

    Response: They are inspection ports for the leach field.

11. Are leach fields to be used one at a time?

    Response: No, the treated effluent flow will distribute evenly to the two leach fields.

12. What are the required effluent parameters?

    Response: Generally, the requirements are less than 30 mg/L of TSS and less than 30 mg/L of BOD.

13. Will treatment plant area be secured after construction is completed?

    Response: The area around the blowers, control panels, and generator will be enclosed in a chain-link fence.

14. Is the outlet elevated (from the box bottom) in the distribution box which we are expected to take samples from?

    Response: Yes, the outlet pipe is elevated a few inches off the box bottom to ease sampling.

15. How does the blower automatic pressure shutoff work?

    Response: There is a pressure switch located on the discharge of each blower to automatically shut it down if excess pressure is detected for 60 seconds.

16. Where is sludge pumped from the treatment plant?

    Response: There are two sludge access ports that provide access down to the bottom of the tank.

17. Where can samples for settleability be taken from?

    Response: Samples for this can be taken from the sludge access ports.

18. Is there a construction warranty?

Response: Yes, construction warranty for 1-year.

Approved by:

Rick T. Sogawa
Acting Procurement Officer

EQUAL HOUSING OPPORTUNITY

REVISED BID OFFER FORM

(PROPOSAL)

FOR

PROVIDE OPERATIONAL AND PREVENTIVE MAINTENANCE SERVICES

FOR THE NEW SEWAGE TREATMENT PLANT

AT

KUPUNA HOME O`WAIALUA, HA 1050

WAIALUA, OAHU, HAWAII

TAX MAP KEY: 6-7-16:28

HPHA JOB NUMBER: 11-022-150-S

To: Hawaii Public Housing Authority (HPHA)
1002 North School Street
Honolulu, Hawaii 96817

Gentlemen:

The undersigned, ("Bidder") having visited the site of work, became familiar with the conditions under which the work is to be performed. He has read the specifications and other documents relating to the **HPHA Job No. 11-022-150-S, PROVIDE OPERATIONAL AND PREVENTIVE MAINTENANCE SERVICES FOR THE NEW SEWAGE TREATMENT PLANT AT KUPUNA HOME O`WAIALUA, WAIALUA, OAHU, HAWAII,** hereby proposes to furnish all labor, materials, equipment, and services required to complete the following proposal in place complete. The services are shown and called for, all according to the true intent and meaning of the plan and specifications for a one (1) year period, for the Lump Sum Bid (including the HPHA or Department of Health reports, permit fees, lab tests, and pumping service charges) specified below:

1. **BASE BID: One (1) calendar year maintenance period,** for a total lump sum of (including Department of Health and Environmental Protection Agency requirements, reports, permit fee, lab tests, pumping service charges and the Hawaii General Excise Tax and any other applicable fees, taxes and surcharges):

_____

_____DOLLARS ($ _____)

2. **OPTION YEAR 1: One (1) calendar year maintenance period,** for a total lump sum of (including Department of Health and Environmental Protection Agency requirements, reports, permit fee, lab tests, pumping service charges and the Hawaii General Excise Tax and any other applicable fees, taxes and surcharges):

_____

_____ DOLLARS ($ _____)

3. **OPTION YEAR 2: One (1) calendar year maintenance period,** for a total lump sum of (including Department of Health and Environmental Protection Agency requirements, reports, permit fee, lab tests, pumping service charges and the Hawaii General Excise Tax and any other applicable fees, taxes and surcharges):

_____

_____ DOLLARS ($ _____)

4. **UNIT PRICE: MAN-HOUR RATES FOR EMERGENCY SERVICES.** Emergency services shall be paid to the Contractor on an actual time and material basis. The man-hour rates for such emergency services are as follows:

TIME	SERVICES	HOURLY RATE
7:30 a.m. to 4:30 p.m.	Mechanical:	$ _____ per hour
	Electrical:	$ _____ per hour
4:31 p.m. to 7:29 a.m.	Mechanical:	$ _____ per hour
	Electrical:	$ _____ per hour
Saturday (all day)	Mechanical:	$ _____ per hour
	Electrical:	$ _____ per hour
Sunday & State Holidays (all day)	Mechanical:	$ _____ per hour
	Electrical:	$ _____ per hour

Hourly rates shall apply for the duration of the Contract from the base 1-year maintenance period to Option Year 1 and Option Year 2.

5. In submitting this bid, it is understood that the bidder has examined and is familiar with the existing site conditions and the scope of work as provided by the drawings and specifications and accepts all conditions of the work.

6. The low bidder for purposes of award shall be the conforming responsible bidder offering the lowest Base Bid amount.

7. The HPHA reserves the right to accept or reject any and all proposals, and to determine the lowest responsible bidder. Pursuant to Section 356-15.5 of the Hawaii Revised Statutes, if all bids are above the budgeted amount and funds available, the HPHA reserves the right to negotiate with any bidder or non-bidder at the HPHA's sole discretion.

8. The bidder understands and agrees that all work shall be completed within one (1) calendar year and each option year(s) from the date stipulated on the Notice to Proceed as provided in the Contract and the Special Conditions.

9. The bidder understands that this bid may not be withdrawn for ninety (90) calendar days after the opening of bids.

BIDDER SHALL CONFIRM THE EXISTENCE OF ANY ADDENDUM TO THIS BID SOLICITATION BY TELEPHONE AT (808) 832-5340.

Receipt of the following addenda (if any) issued by the HPHA is acknowledged by the date(s) of receipt indicated below:

Addendum No. 1 _____ Addendum No. 2 _____

It is understood that failure to receive any such addendum shall not relieve the Contractor from any obligation under this Proposal as submitted.

FIRM NAME_____

_____

By_____

Title_____

Date_____, 20___

OFFICIAL ADDRESS:

_____

_____

_____

_____

REVISED TECHNICAL SPECIFICATIONS

Providing Operational and Preventive Maintenance Services for the Sewage Treatment Plant at Kupuna Home O`Waialua, Waialua, Oahu, Hawaii.

Table of Contents:

I. DESCRIPTION OF MAINTENANCE SERVICES:

The services shall consist of performing required operational and preventive maintenance of the new sewage treatment plant, sewage lift station, and the emergency generator located at Kupuna Home O`Waialua, HA 1050, 67-088 Goodale Avenue, Waialua, Oahu, Hawaii.

Such services are to be conducted in accordance with the best practices of the industry governing the operation and maintenance of sewage treatment plants, sewage lift/pump stations and in accordance with manufacturer's instructional manuals, so as to assure the final effluent is within the State Department of Health and EPA requirements.

Such services will include furnishing and paying for water testing and analysis, sludge measuring devices, waste sludge removal, labor, materials, minor parts, and hand tools necessary to properly operate and maintain the new sewage treatment plant, sewage lift/pump station and emergency generator. Inspection and monitoring reports shall be submitted to Hawaii Public Housing Authority (HPHA). Handwritten inspection and monitoring reports will not be allowed.

Minor parts shall mean those parts costing less than $50.00 and major parts shall mean parts costing individually $50.00 or more as shown on the manufacturer's price list.

Only new standard parts manufactured by the maker of each unit or parts of equal quality shall be used. The Contractor will be furnished or compensated by HPHA for any major parts or equipment replacement. The Contractor shall provide all chemicals, including chlorine and chemicals needed for required testing. Contractor must maintain a daily running log (checklist) recording the date of each operational and maintenance service work performed and who performed the work. The log book shall be kept at the project site.

II. CERTIFICATIONS:

A. The Contractor shall have a Grade 2 Wastewater Treatment Plant Operator license or higher in the State of Hawaii.

III. GENERAL INFORMATION:

A. SEWAGE TREATMENT PLANT

The sewage treatment plant has a capacity of 10,000 gallons per day and is manufactured by Smith & Loveless, Inc., Job No. MF-00291-L. The sewage treatment plant is an underground fixed-media activated sludge system which utilizes submerged media. Airlifts aerate and circulate the contents inside the tank. The treatment plant tank has two observation ports and two ports for sludge measurement/pumping. Bacteria grow on the media and metabolize the wastewater as it passes through the media, resulting in biological treatment. The oxygen required by the sewage treatment plant is supplied by above-ground redundant air blowers. Each air blower will be controlled by a variable speed drive to automatically ramp up/down based on the readings from a dissolved oxygen sensor within the treatment plant. The dissolved oxygen sensor continuously measures the dissolved oxygen and temperature in the. The blowers are programmed to alternate automatically every 12 hours. The blower controls are located in a cabinet next to the blowers.

The sewage treatment plant includes the following major components:

1. Sewage treatment plant module (below-ground), Smith & Loveless Model KX1126T
2. Two (2) positive displacement blowers, Dresser Roots, Model Universal RAI-36, 75 SCFM, 4 to 7 psi operating pressure, 1426 RPM
3. Two (2) blower motors, 7.5 HP, 1750 RPM
4. Blower intake and discharge silencers for each blower, Universal Silencer Model URB-2.5;
5. Isolation valve, check valve, air relief valve, pressure gauge, and pressure switch for each blower;
6. Two (2) fiberglass blower enclosures
7. Dissolved oxygen sensor, Environmental Instruments, LLC, Model FL-3 Fluoroprobe

8. Control Panel which includes:
    a. Two (2) blower variable speed drives, 3 Phase, 11 kW, ABB, Model ACH550-01-046A-2
    b. Dissolved oxygen sensor controls
    c. Control panel air conditioning unit, McLean, Model T20
9. There are two (2) air lift valves and one (1) air scour valve located next to the tank.

B. SEPTIC TANK

The septic tank is a 10 feet diameter underground fiberglass tank with a volume of 10,000 gallons and is manufactured by Xerxes Corporation. The volume of the septic tank is sized for roughly one day of flow. The septic tank is intended to be a pretreatment system to remove large solids/debris from entering the sewage lift station and the sewage treatment plant. The septic tank has three (3) inspection ports and contains an internal baffle wall. Generally, grease and large objects will float to the water surface and wastewater will pass through openings within the baffle.

C. SEWAGE LIFT/PUMP STATION

The sewage lift station is contained within an underground wet well which has an inside diameter of 4 feet. The lift station contains a redundant pumping system. The primary purpose of the sewage lift station is to pump the flow into the sewage treatment plant. The pumps alternate automatically after every pumping cycle. The pumps operate based on a pressure transducer level measurement device. There are also back-up floats for low level and high level alarms. In alarm events, the pump control panel uses a telephone line to send an automated message to the operator. The pump control panel is located on the electrical equipment rack.

The sewage lift station includes the following major components:

1. Two (2) submersible sewage pumps, Ebara, ½ HP, 1 Phase, 120 V, Model 50DWXFU6.4
2. Two (2) pump removal systems include stainless steel slide rails and stainless steel lifting chains.
3. Level sensors:
    a. Pressure transducer, GE PTX 1290
    b. 2 float switches, manufactured by Conery
4. High level and low level wet well alarm
5. Pump control panel which includes:
    a. Telephone line to dial out to operator in event of alarm
    b. Magnetic flow meter transmitter, Siemens, Model MAG 5000

D. LIFT STATION VALVE BOX

The lift station valve box is located next to the sewage lift station. The valve box contains the valves and the flow meter for the sewage lift station. The flow meter read out is located inside the pump control panel. The valve box includes the following major components:

1. Two (2) check valves, Spears, Swing Check
2. Two (2) ball valves, Spears, Model True Union 2000
3. Magnetic flow meter, Siemens, Model MAG 5100W

E. CHLORINE FEED SYSTEM

The primary purpose of the chlorine feed system is to provide disinfection. The disinfection system consists of a manually fed chlorine tablet feeder which is installed within a manhole. The chlorine feed system is located next to the sewage treatment plant.

The following are the major components of the chlorine feed system:

1. Chlorine Tablet Feeder, Norweco, Bio-Dynamic XT 2000

F. EMERGENCY GENERATOR

The primary purpose of the propane generator is to provide back-up power to the sewage lift station and the air blowers of the sewage treatment plant. The generator is fueled by commercial grade propane from the Gas Company. The generator has an automatic transfer switch which will detect a loss of normal power and will turn on the generator. The generator can run for 24 hours or until the site runs out of fuel.

1. Emergency propane generator, Cummins West, Inc., 30 kW, Model GGMC, 30 kW, 120/240V, Single Phase, 3W
2. Automatic transfer switch, Cummins, Model OTEC, 120/240V, Single Phase, 3W
3. Propane fuel system (on-site HPHA-owned gas tank)

G. EFFLUENT DISPOSAL SYSTEM

The facility has two (2) underground effluent disposal systems, designed to be a redundant system. A flow distribution box divides the effluent flow evenly to the two leach fields. Each leach field has an isolation valve to shut off service. The system consists of:

1. One (1) flow distribution box
2. Two (2) valve boxes each containing a ball valve (Spears True Union 2000 with handle extension)

3. Leach Field #1, constructed with 4" perforated PVC pipes
4. Leach Field #2, constructed with chambers (Advanced Drainage Systems, Inc. Model ARC 36 HC)
5. Inspection ports for both leach fields

IV. SPECIFICATION FOR SERVICES OF SEWAGE TREATMENT PLANT:

A. GENERAL SERVICES FOR THE COMPLETE SYSTEM

The general operational and maintenance service shall be performed during each visit and shall include, but not be limited to, the following:

1. Weekly Services Required: (minimum of four (4) days per calendar month)

    a. Ensure location of mechanical equipment and electrical controls are secured and protected.
    b. Ensure all protective covers are in place.
    c. Check for unusual odors.
    d. Inspect and lubricate all mechanical equipment according to the manufacturer's recommendations.
    e. Check all systems for leaks and damage.
    f. Check all gauges and monitoring devices and keep in proper working order.
    g. Maintain a running log recording the date of each operational and maintenance service work performed and who performed the work.
    h. Take water samples, conduct analysis and prepare reports as required to meet Department of Health "Hawaii Administrative Rules" Chapter 11-62 regulations. Submit copy of the test results to the HPHA Project Engineer and to the State Department of Health as required.

2. Monthly Services Required:

    a. Ensure all emergency functions are in proper working condition.
    b. Take water samples, conduct analysis and prepare reports as required to meet Department of Health "Hawaii Administrative Rules" Chapter 11-62 regulations. Submit copy of the test results to the HPHA Project Engineer and to the State Department of Health as required.
    c. Prepare and submit to the HPHA Project Engineer a monthly summary of events and visits.
    d. Waste sludge disposal services and the monthly invoice must reflect the authorized disposal site.

3. Annual Services Required:

a. Perform corrosion control on all visible rust on all exposed metal and equipment. Chip, wire brush and apply rust preventive primer, and two (2) coats of industrial enamel to match existing color.
b. Be present for and assist in the annual State Department of Health inspections.

4. As Required:

a. Measure sludge build-up in the treatment plant tank bottom. Schedule sludge pumping and disposal as required to maintain sludge within manufacturer's recommendations. Treatment plant and septic sludge pumping shall be performed on the same day.
b. Remove pumps from the wet well; clean and inspect, paying particular attention to pump impellers.
c. Operate and lubricate all valves, repack as required.
d. Test, inspect, clean and lubricate all major electrical equipment including motors, starters, float switches, pressure transducers, dissolved oxygen sensors, contactors, circuit breakers, fuses, relays and magnetic starters in accordance with manufacturer's instructions.
e. Pump down, flush and inspect lift station wet well. Scrape wet well walls, remove grit, grease and debris from wet well and dispose at approved landfill site.
f. Inspect, clean and service check valves and pump impeller. Overhaul pumps as required.
g. Clean all exposed bare metal and rust spots and apply touch up paint to match.
h. Air scour media in aeration zone for 30 minutes during low flow period if spacing between media is less than 0.5 inches.

B. SLUDGE PUMPING FREQUENCY ADJUSTMENTS

a. During the first year of operation, the contractor, upon prior approval from HPHA, shall make adjustments to the treatment plant sludge pump frequency to maintain effluent standards which meets the requirements of the State Department of Health. Sludge pumping for the treatment plant, however, shall be pumped at a minimum of every 3 months.
b. During the first year of operation, the contractor, upon prior approval from HPHA, shall make adjustments to the septic tank sludge pump frequency to maintain effluent standards which meets the requirements of the State Department of Health. Sludge pumping for the septic tank, however, shall be pumped at a minimum of every 2 months.

C. DETAILED SERVICES FOR SYSTEM COMPONENTS

SEWAGE TREATMENT PLANT

1. Weekly Services Required: (minimum of four (4) days per calendar month)

   a. Check the air blowers and motors in accordance with the manufacturer's instructions and recommendations.
   b. Check oil levels in air blowers once per week and replace as required.
   c. Check air pipes for clogging and proper operation.
   d. Perform all lab tests as required by the State Department of Health; mix liquor suspended solids and effluent suspended solids.
   e. Record dissolved oxygen sensor and temperature reading at blower control panel once per week to ensure adequate conditions are maintained.
   f. Remove and clean dissolved oxygen sensor with soft cloth once per week.
   g. Check for debris on surface of media and remove as required.
   h. Test both blowers by manually running each blower.
   i. Measure and record sludge build up in the treatment plant tank bottom.
   j. Inspect media in aeration zone for adequate spacing (at least 0.5 inches) for water circulation. Air scour (backwash) as necessary.

2. Monthly Services Required:

   a. Check air pipes for clogging and proper operation.
   b. Take water samples and prepare reports as required to meet Department of Health "Hawaii Administrative Rules" Chapter 11-62 regulations. Submit copy of the test results to the HPHA Project Engineer and to the State Department of Health as required.
   c. Exercise air valves and perform air scour (backwash) per manufacturer's recommended procedure prior to sludge removal. Coordinate with sludge pumping schedule.
   d. Lubricate each blower.
   e. Check air blowers for proper operation. Inspect belts and replace as necessary.
   f. Check air filter elements of blower intake silencers and replace as required.

g. Monitor and remove monthly sludge generated by the plant according to manufacturer's recommended procedures. Coordinate the sludge removal and the septic tank sludge removal to be on the same day.
h. Waste sludge disposal service and monthly invoice must reflect an authorized disposal site. The volume of sludge wasted, the solids concentration of sludge wasted, the name of the sludge pumping and hauling firm, and the dates of pumping and hauling, shall be recorded.

3. Quarterly Services Required:

a. Check air blower oil seals for leaks.
b. Air scour (backwash) media in aeration zone for 30 minutes during a low flow period per manufacturer's recommended procedure.

4. Biannual Services Required:

a. Calibrate dissolved oxygen probe as per manufacturer's recommended procedure.

5. Annual Services Required

a. Perform vibration check on air blowers per manufacturer's recommendations.
b. Obtain plant influent sampling upstream of septic tank for BOD and TSS to ensure incoming bacteria levels are within plant limitations.
c. Replace filter elements of the air blower intake silencers if they have not been replaced for 12 months.
d. Replace oil in air blowers if they have not been replaced for 12 months.

SEPTIC TANK

1. Weekly Services Required:

a. Open inspection ports and check if tank is operating with normal water levels.

2. Monthly Services Required:

a. Monitor and remove monthly sludge, debris, and solids from access ports.
b. Waste sludge disposal service and monthly invoice must reflect an authorized disposal site. The volume of sludge wasted, the solids concentration of sludge wasted, the name of the sludge pumping and hauling firm, and the dates of pumping and hauling, shall be recorded.

SEWAGE LIFT STATION

1. Weekly Services Required:

   a. Check the pumps and motors in accordance with the manufacturer's instructions and recommendations.
   b. Check pump control panel and its internals for damage.
   c. Test and clean the level control and alternator switches as required.
   d. Test control panel telemetry functions.
   e. Test the magnetic starters, and clean and adjust as required.
   f. Keep wet well clear of debris and grease accumulation.
   g. Record daily flows from pump control panel.
   h. Check pump run times to ensure equal pump usage. Manually rotate lead and lag pumps or observe automatic pump alternation.
   i. Check for debris on wet well water surface and remove as required.

2. Quarterly Services Required:

   a. Pump down wet well, hose down and clean out all grease accumulation.
   b. Test wet well high level alarm for visual and audio functions.
   c. Waste sludge disposal service and monthly invoice must reflect the authorized disposal site.

3. Annual Services Required:

   a. Remove pumps from the wet well; clean and inspect. Pay special attention to the pump impellers.
   b. Clean floats and pressure transducer.

LIFT STATION VALVE BOX

1. Monthly Services Required:

   a. Open valve box cover to inspect for standing water or debris.
   b. Perform visual inspection for integrity of flow meter.

CHLORINE FEED SYSTEM

1. Weekly Services Required:

   a. Open manhole cover, remove and clean feed tubes with fresh water and a brush.
   b. Add chlorine tablets as needed.
   c. Adjust baffle with adjustment tool to change chlorine contact time. Increase contact time by raising inlet baffle and decrease contact time by lowering the inlet baffle.

CONTROL PANELS

1. Weekly Services Required:

    a. Inspect equipment control panel internals and check for damage.

EMERGENCY GENERATOR

The emergency generator and associated automatic transfer switch should be left in the "Automatic" mode.

1. Perform periodic maintenance as recommended by manufacturer's operator manual. Maintenance tasks shall be documented by photos to maintain the system's warranty.

2. Weekly Services Required or After 8 Hours of Operation (whichever occurs first):

    a. Check for oil, fuel, cooling and exhaust system leaks.
    b. Check engine oil level, coolant level, and coolant heater.
    c. Check fuel tank levels (check gauge).
    d. Check all system gauges.

3. Monthly Services Required or After 100 Hours of Operation (whichever occurs first):

    a. Check air cleaner, service as necessary in accordance as recommended by manufacturer's instructions.
    b. Check starting battery electrolyte level and service starting battery. Check and record battery amps.
    c. Check all hardware (fittings, clamps, fasteners, etc.)
    d. Check fuel lines, connections, meter, and generator air outlet.
    e. Test transfer switches and maintain as required.
    f. Test switch circuitry to ensure proper functioning.
    g. Run the generator engine under load for a minimum of 30 minutes operating the sewage lift pumps and treatment plant air blowers.

4. Bi-Annual Services Required or After 250 Hours of Operation (whichever comes first):

   a. Change engine oil and filter. Replace after one year.
   b. Check radiator hoses for wear and cracks. Replace if hard or brittle.
   c. Check belt drive. Visually check belt for evidence of wear or slippage. Replace if hard or brittle.
   d. Check anti-freeze concentration.
   e. Check AC generator and controls

5. Annual Services Required or After 500 Hours of Operation (whichever comes first):

   a. Replace Positive Crank Case Ventilation Valve.
   b. Inspect distributor cap and rotor.
   c. Inspect secondary ignition wires.
   d. Clean cooling systems.
   e. Inspect or replace spark plugs. Replace after every 1,000 hours of operation.
   f. Inspect or replace oxygen sensor. Must be performed by a qualified mechanic. Contact an authorized service center. Replace after every 1,500 hours of operation.

EFFLUENT DISPOSAL SYSTEM

1. Weekly Services Required:

   a. Open manhole cover of flow distribution box and check water levels to ensure no surcharging is occurring.
   b. Take effluent grab sample for chlorine residual.

2. Monthly Services Required:

   a. Take effluent grab samples for BOD, TSS, pH, temperature and alkalinity from water in the flow distribution box.
   b. Open leach field inspection ports and check water levels.

3. Annual Services Required:

   a. Take effluent grab samples for Total Kjeldahl Nitrogen, Ammonia Nitrogen, and Phosphorus from water in the flow distribution box.

V. EMERGENCY SERVICES:

The Contractor shall provide 24-hour service capabilities to handle emergency service, repair or replacement. Emergency services shall be paid for by the HPHA to the Contractor on an actual time and material basis. The Contractor shall respond and be on-site within six (6) hours of notification by the HPHA personnel of an emergency.

The cost of parts charged for emergency services shall be the actual cost with the original invoices submitted to the HPHA for approval prior to payment.

VI. WORKMANSHIP:

All operational and maintenance services including emergency services shall be done in a first-class workmanlike manner by mechanics skilled in the trade and under proper supervision of the contractor.

VII. PROTECTION:

The Contractor shall take all necessary precautions to protect the public and tenants from injury resulting from his work. The Contractor shall provide his own safety equipment such as goggles, gloves, masks, etc. as required to complete his work.
The Contractor shall take all necessary steps to safeguard his work and also the property of the HPHA as well as other individuals in the vicinity of his work area during the execution of this contract. He shall be responsible for and make good on any and all damages and for losses to work or property caused by his or his employee's negligence.

VIII. CONTRACTOR AND THE STATE DEPARTMENT OF HEALTH:

The Contractor shall be present at all meetings with the State Department of Health (no more than twice a year).

IX. STORAGE OF MATERIALS AND EQUIPMENT:

The Contractor shall store materials and equipment at the jobsite only upon the approval of the HPHA Project Engineer. The HPHA will not be responsible for the loss or damage of any materials and equipment stored on site.

X. NOTIFICATION OF THE HPHA STAFF AND RESIDENTS:

The Contractor shall notify and coordinate with the AMP Manager at least 48 hours in advance of any work that would produce noxious odors, excessive noise or utility outages.

XI. CLEAN-UP:

At completion of each operational and/or maintenance service or emergency service, the Contractor shall clean up and remove all rubbish, grease and debris from the premises resulting from this work, and keep the entire sewer treatment plant area clean and neat.

End of Section